West Virginia's Nonpoint Source Program

Annual Report

FY 2009

west virginia department of environmental protection

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STATEMENT OF POLICY REGARDING THE EQUAL OPPORTUNITY TO USE AND PARTICIPATE IN PROGRAMS

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West Virginia's Nonpoint Source Program is funded by a Clean Water Act Section 319 Grant administered by the U.S. Environmental Protection Agency.

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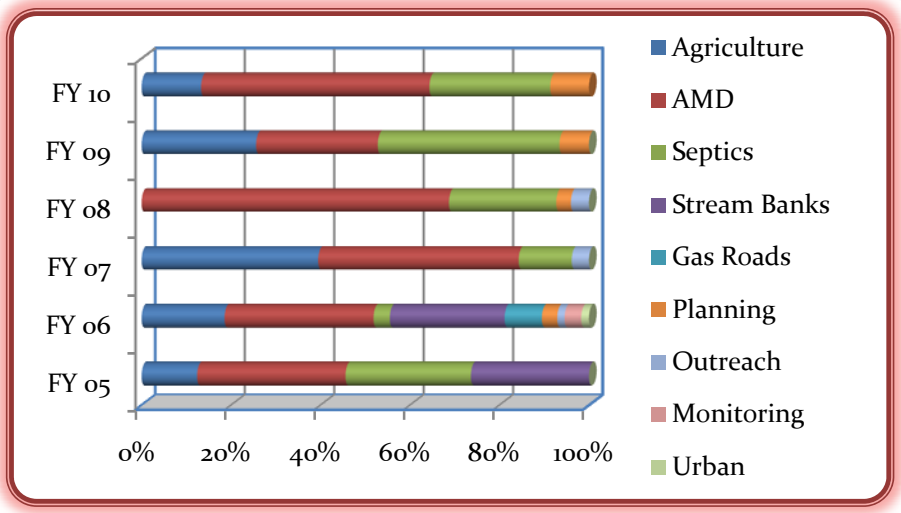
Executive Summary

West Virginia's Nonpoint Source Program (NPSP) continued expanding in FY 2009 with new watershed plans, projects and partnerships. While continuing the restoration efforts in watersheds funded in previous years, a new focus on the Greenbrier River began to take shape in 2009. Also major watershed planning efforts started in the Coal River, Piney Creek and Muddy Creek with funding from other sources besides CWA §319 grants. FY 2009 saw a significant amount of program activity in the Chesapeake Bay (Potomac) drainage and a significant increase in wastewater treatment projects.

The FY 2009 §319 grant was awarded in August which meant that fiscal years 2005 to 2009 grants were open. Of the 31 incremental projects from those years, eight have been completed by the end of this fiscal year, a 25.8% completion rate. A ninth project was completed in October. In those five open grants, base grant funds were used for small grants called Announcement of Grant Opportunity (AGO) grants. A total of $276,747 §319 funds were awarded for 18 different projects to watershed associations and other nonprofit organizations.

Acid mine drainage (AMD) treatment from abandoned coal mining still predominates the project types from the NPSP with 42.9% of the funds for active §319 incremental projects. A project category that has increasingly been the focus of NPSP projects is on-site wastewater treatment. It now ranks second in active NPSP projects with 27% of §319 incremental funds. Agriculture is still an important NPSP category with 21.6% of §319 incremental funds. With the growing focus on the Chesapeake Bay and the Greenbrier River this will probably increase in the future.

Chart 1: Nonpoint Source Project Categories



Other activities supported by the NPSP include: outreach, education, watershed planning and monitoring. NPSP supported staff and partners organized or participated in 119 outreach/educational events reaching over 9100 people and the program supported outreach efforts from nonprofit groups that reached another 164 people. This does not include other events where NPSP staff operated booths highlighting nonpoint source issues. An example is the WV Contractor's EXPO in March. Over 6000 attendees attended the EXPO and were assisted by WV Conservation Agency (WVCA) Conservation Specialists on sediment and

erosion control issues at their booth. At the EXPO the WVCA Watershed Resource Center hosted a 1 ½ hour workshop on "Innovative BMPs for Sediment & Erosion Control" to 75 attendees. Over 1000 tree seedlings & protective covers, reusable grocery bags, "Losing Ground" post cards, Water Conservation Ideas books were distributed.

The NPSP supports monitoring efforts including the state's volunteer monitoring program, WV Save Our Streams (WVSOS). In the Lower Cheat River and Deckers Creek §319 grants supports the efforts by the respective watershed associations to determine the environmental results of the multiple AMD passive treatment systems being installed and locate undiscovered sources of AMD. The WVSOS program was presented in some form at 47 events reaching over 2700 people. Fourteen of those events were training workshops attended by 245 people resulting in 60 volunteer monitoring certifications.

The primary focus of the NPSP is the implementation of projects especially in priority watersheds. The installation of best management practices (BMPs) from NPSP, Natural Resource Conservation Service (NRCS) and county health departments that occurred as a part of restoration efforts included:

- 49 on-site wastewater systems installed
- 63 on-site wastewater systems pumped
- 6,174 linear feet of stream bank stabilization
- 1,423 acres of riparian buffers established
- 72,158 feet of livestock fencing
- 35 nutrient management plans
- 12 alternative livestock watering systems
- Five AMD passive treatment systems

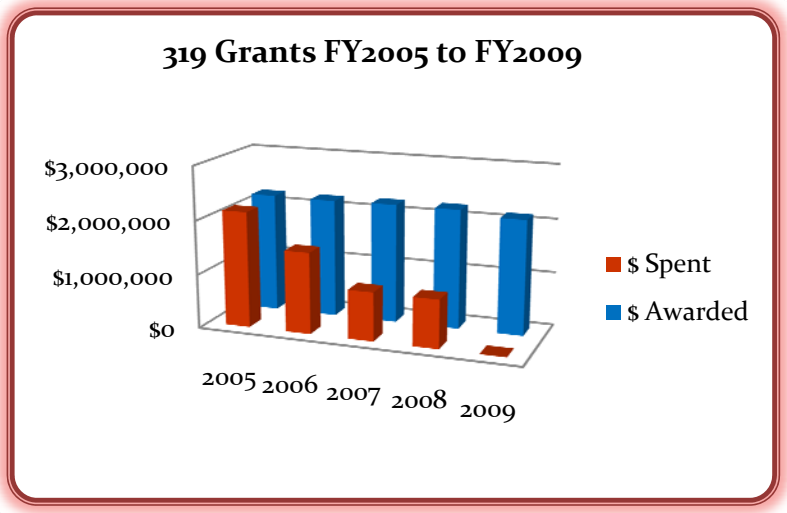
The total estimated ***new*** reductions in nonpoint source pollutants were:

- 6.75×10^{14} cfu of fecal coliform bacteria
- 57,268 tons/year of sediment
- 21,911 lbs/year of nitrogen
- 253,230 lbs/year of phosphorus
- 320 tons/year of acid
- 12,860 lbs/year of aluminum
- 115,401 lbs/year of iron
- 5,520 lbs/year of manganese

West Virginia's FY 2009 §319 grant totaled $2,127,600 with $1,024,400 going to the base program and $1,103,200 going to the incremental program. In FY 2009 five grant years were open accounting for $10,864,700 in Federal funds made available to West Virginia. The amount of these funds spent is $6,466,899 leaving $4,397,801 of §319 funds still available for active projects after September 30, 2009. (Chart 2).

The monitoring efforts supported by the NPSP have shown that several streams of focus are near to total restoration. Morris Creek and Long Branch were highlighted in success stories in 2008 for attainment of pH standards. Unfortunately aluminum and iron concentrations still violate standards under low flow conditions that prevent removal from the 303(d) list. Upgrades or maintenance of the systems installed in these streams are being considered. Sovern Run in the Lower Cheat is close to full restoration and is the focus of a FY 2010 §319 grant.

Chart 2: §319 Funds; Funds Awarded vs. Funds Spent



Since 2006 four streams classified as impaired have been restored sufficiently enough to be classified as fully meeting designated uses.

Morris Creek Trout

Morris Creek data shows that achievement of the water quality standard for aluminum has not been sufficiently met but the water quality has improved enough to stock trout in the stream. The Morris Creek Watershed Association (MCWA) and the Kanawha Valley Chapter of Trout Unlimited (KVCTU) have partnered to stock brown trout the last three years. Reports are that good size trout are now being caught in the Morris Creek.

In 2009 MCWA and KVCTU partnered again with the sponsorship of Chesapeake Energy, Inc. to do a Trout in the Classroom project at East Bank Elementary School. Fifth and sixth graders raised rainbow trout from eggs to fingerlings. The students then spent a day in the field releasing their trout (above) and touring the AMD treatment systems installed in 2006. The event was covered by the local media.

Nonpoint Source Program Overview

Introduction

West Virginia's Nonpoint Source Program (NPSP) takes an interactive approach to improving the state's waters that have been degraded or are threatened with degradation from unregulated sources of water pollution. By working with partners such as other state and federal agencies, watershed associations, businesses and all other stakeholders a comprehensive solution to the problems is the goal.

Most of the TMDLs in West Virginia call for most of the pollutant load reductions to come from non-point sources. As such, the §319 funds are being used as a major source of TMDL implementation funding. The NPSP staff, funded under the Base Grant, has devoted much of their efforts towards developing and implementing Incremental Grant projects. The NPSP and related programs, such as the Chesapeake Bay Program and the Stream Partners Program, facilitates the acquiring of additional funds for specific projects. Other funding programs involved with some projects include the Watershed Cooperative Agreement Program and Mining and Reclamation Program with mining mitigation and penalty funds.

The specific pollutants originating from non-point sources are as varied as the land uses. Heavy metals such as iron, aluminum and manganese are common in waters polluted from abandoned coal mining but they also are prevalent in streams affected by heavy sedimentation. Nutrient and bacterial non-point source pollution comes from agriculture and inadequate residential wastewater treatment. Failing septic systems and straight pipe disposal poses public health risks as well as water quality problems in older and rural communities.

Teresa Koon of DEP's NPSP receives the Partners In Conservation Award from U.S. Secretary of the Interior Ken Salazar along with Rick Buckley of OSM, Todd Miller of CVI and Jami Thompson and Pam Russell of WVCA on behalf of the WV Watershed Network.

West Virginia's NPSP focuses on solving these problems through encouraging, educating and assisting local stakeholders in voluntary correction of non-point source problems. The NPSP supported by the §319 grant, the Chesapeake Bay grant and in part by the §106 grant has 11 full time staff members. The responsibilities of this staff ranges from administration to project planning, implementation and oversight. The NPSP uses a stakeholder process to develop watershed based plans and projects. Project teams often lead by or facilitated by the NPSP organize the stakeholders and guide the process. Most incremental projects are coordinated through a project team

involving all interested stakeholders. Forming partnerships with these other groups is an important component of any successful endeavor. The most successful efforts have been those where local stakeholders have provided the impetus for the projects.

Partners

The Non-point Source Program (NPSP) supports the efforts of four WV state agencies to reduce non-point source pollution from various land use activities; WV Department of Environmental Protection, WV Conservation Agency, WV Division of Forestry and the Division of Health and Human Resources. The base non-point source programs' goals are to:

- Provide technical assistance in the proper installation and maintenance of best management practices (BMPs).
- Educate the public and land users on non-point source issues
- Support citizen based watershed organizations
- Support enforcement of non-point source water quality laws
- Restore impaired watersheds.

The partners funded through the S319 Base Program are:

- **The West Virginia Department of Environmental Protection (DEP) Division of Water and Waste Management (DWWM)** is the designated lead agency in the state for the Nonpoint Source Program (NPSP). It is responsible for the administration of the program and reporting requirements including the Grant Reporting Tracking System (GRTS). The management of the NPSP's components is coordinated by the DWWM Program staff. The Program partners with the Watershed Assessment Branch of DWWM for monitoring. The DWWM NPSP also includes the Chesapeake Bay Program (CBP) and the Stream Partners Program (SPP).
- **The West Virginia Conservation Agency (WVCA)** is the lead agency for the construction and agriculture components for the Program. The agriculture component of the nonpoint source program partnership consists of the West Virginia Conservation Agency, USDA Natural Resources Conservation Service, and the 14 Conservation Districts. The construction component of the nonpoint source program provides technical assistance and education to landowners, contractors, developers, and local governments in West Virginia.
- **The DEP's Office of Oil and Gas (OOG)** is the partner whose role is the promotion of proper best management practice design and installation and maintenance on oil and gas drilling sites and access roads.
- **The Department of Health and Human Services (DHHR)** is to focus on the issue of failing septic systems.
- **The WV Division of Forestry (DOF)** is the state agency that enforces the Logging Sediment Control Act. DOF coordinates the Logging BMP Committee that sets BMP standards and provides education and training for logging operators.

Other major partners with the NPSP on incremental grant projects are:

- **The National Mine Lands Reclamation Center (NMLRC)** provides technical assistance and implementation on many of the program's AMD projects.

- **The WVDEP Abandoned Mine Lands Program (AML)** also provides technical assistance and implementation on AMD projects.
- **The WVDEP Division of Mining & Reclamation** consists of four offices including AML, the NPSP works closely with this division in the use of mining mitigation funds.
- **The U.S. Office of Surface Mining (OSM)** is a partner in funding of AMD projects through the Watershed Cooperative Agreement Program (WCAP).
- **The Natural Resource Conservation Services (NRCS)** is a partner involved in agricultural projects.
- **Citizen Watershed Associations** are the citizen volunteers who provide much needed local support, information and resources.
- **Canaan Valley Institute** provides technical assistance on decentralized wastewater treatment and natural stream channel design planning and projects.

Nonpoint Source Program Goals for FY 2009

- ❑ Complete all FY 2005 projects. This will include the first major community cluster wastewater treatment system.
- ❑ Gain approval of four more watershed based plans including two in the Greenbrier watershed.
- ❑ Conduct 14 WVSOS regional workshops for volunteer monitoring and organize 4 agriculture educational field days.
- ❑ Host the 2009 Region 3 State's NP, TMDL, Water Quality Standards and Watershed Assessment Meeting to be held in May 2009.
- ❑ Submit at least five new incremental project proposals for FY 2010.

Nonpoint Source Program Mission Statement

To implement dynamic and effective nonpoint source programs to enhance and preserve the physical, chemical and biological integrity of surface and ground waters, considering nature and health, safety, recreation and economic needs of humanity, with a focus on a watershed management approach.

Nonpoint Source Management Plan 2000

The Nonpoint Source Program (NPSP) supports a wide variety of activities and projects to produce sustainable restoration and protection of streams from nonpoint source pollution. To accomplish this, the NPSP relies heavily on the §319 grant from the U.S. EPA. The §319 grant is comprised of two types of funds, the base grant and the incremental grant. The base grant supports outreach, education, monitoring, planning, administration and non-TMDL projects. The TMDL implementation projects, project management, planning and monitoring of projects are supported by the incremental grant.

In FY 2009 there were 30 active incremental projects and 11 active AGO grants awarded from base grant funds.

Some of the programs and activities funded through WV's §319 grant include:

WV Save Our Streams

WV Save Our Streams (WVSOS) has developed some new activities as a result of its outreach efforts. For several years the program has provided training for the Eastern Coal Regional Roundtable (ECRR) so that the OSM VISTA's throughout the Appalachian region are familiar with stream monitoring procedures related to acid mine drainage. These presentations have resulted in a new stream practicum program that took place for the first time this summer. This training is more intensive and participants will receive extensive field work experience.

The program's relationship with WVU's Institute of Technology has resulted in several additional advanced teaching opportunities at state colleges and universities, middle and high schools. Many of these institutions plan to offer a short course in stream monitoring as part of their regular environmental curriculums. WVSOS introduced these courses or at least part of the course to Davis and Elkins College, Richwood High School and John Marshall High School. Cacapon Institute also assisted in this partnership and developed a new stream resource CD. This resource is targeted to students that don't have access to high-speed Internet connections.

Tim Craddock, DEP Coordinator of WVSOS, explaining bug identification to OSM VISTAs.

WV Save Our Streams is involved in several monitoring projects. These include two in the Elkhorn Creek drainage and one in the South Mill Creek drainage. The Elkhorn Creek projects involve one special project which resulted from a diesel spill and a second project monitoring the effects of a proposed sewage project. The data from the diesel spill has been presented at DEP's

Watershed Branch's annual meeting and is available on the Internet. The second effort is in the baseline data phase in the North Fork of Elkhorn Creek for the Ashland wastewater treatment cluster system.

The Spring Run monitoring project is funded in part by the Chesapeake Bay Program and involves a wide variety of partners. The project has completed its final year of monitoring, but there is hope to continue the effort and involve students in future research opportunities.

Fourteen workshops were held during the period; most were level-one; however 25% were more advanced multi-day workshops. A few of the events were held for watershed associations and monitoring groups that have had previous involvement but many new groups also became involved. The areas targeted during the period were southern, southwest, north central and north eastern portions of the state. Approximately 400 participated in these workshops, with 30% becoming new certified volunteer monitors.

Watershed Resource Center

The WVCA Watershed Resource Center (WRC) provides support for the WV Watershed Network and maintains the WVWN website. The staff also provides planning and outreach coordination to the WVWN. This year WV hosted the EPA Region 3 Water Conference. The WRC provided planning support, coordination and logistical support for the conference. Also, the WRC hosted a Sediment and Erosion Control workshop at the 2009 Contractors EXPO with approximately 75 attendees

The WRC has also actively participated in educating the public through expositions and area youth through conservation education field days. A total of 105 students plus teachers were educated on nonpoint source pollution problems and solutions and composting in the backyard. Students enjoyed learning through interactive activities while exploring the Enviroscape model and building their own "worm farms" to begin composting with worms in their backyards. Instructions were given on how to compost at home and recipes for composting in a bag. Approximately 1500 rain chain, rain barrel, rain garden, and Water Conservation Ideas publications were distributed at the Lawn & Garden Expo and the Kanawha Valley Sustainability Fair. Recyclable grocery bags along with facts on their effect on the environment were promoted and 1000 were distributed along with tree seedlings.

Brad Durst of the WVCA demonstrates monitoring equipment to children.

Other Outreach and Education

The WVCA held 57 nonpoint source educational programs attended by 4,268 students, 252 members of the general public and 957 producers, agency personnel and watershed association members. Fourteen agricultural field days were held with 1,393 attendees. Other outreach activities included sediment and erosion control training for 60 people, leading the WVSOS monitoring on 36 stations, and instructing a watershed management class at the WV Conservation Camp for 120 students.

DEP sponsored the 2nd Annual Southern Watershed Association meeting on March 31st, 2009 to help build partnerships for watershed associations and answer concerns they had regarding several grant opportunities, the Stream Sampler Program and Office of Oil and Gas. The meeting had a good turnout with around 50 participants with good evaluation responses. Other DEP NPSP outreach efforts outside of WVSOS had a total estimated participation of 910 people.

Agriculture

The WVCA is the primary entity responsible for the implementation of the West Virginia Agriculture and Construction components of the Section 319 Non-Point Source Program and for coordinating and implementing water quality improvement projects.

WVCA's Conservation Specialists support volunteer watershed associations, educate citizens on non point pollution issues, identify local stakeholders, partners and funding sources, and take the lead for Project Teams consisting of community stakeholders to place projects on the ground.

The WVCA assists in implementing the following programs: State Lime Program, CREP, Conservation Plans, Appalachian Grazing Conference Planning Committee, WV Multiflora Rose and Autumn Olive Program, Grazing Evaluation Contest Committee

The Greenbrier River Watershed Association successfully completed their first §319 grant to do outreach and education in a Karst landscape. The grant provided materials and opportunities for residents of the watershed to learn about their Karst landscape. 600 students from Eastern Greenbrier Middle School attended a field trip to Lost World Caverns to learn first-hand about the karst landscape consisting of caves and sinkholes and the impacts of nonpoint pollution. Students also took a field trip to the Davis Spring on the Greenbrier River to learn about the aquatic ecosystem. Last, a stormwater workshop was conducted in Lewisburg for local contractors to encourage use of BMP's and where to get the materials. A sign was erected at the Caldwell boat ramp and Greenbrier River Trail to educate the public of the Greenbrier River watershed.

and Grazing Plans. WVCA provides coordination for the Lost River, Sleepy Creek, Second Creek and Mill Creek of the South Branch incremental projects, WV Conservation Farm Award Program, WV Envirothon.

WVCA Conservation Specialists (CS) working with NRCS and farmers assisted with riparian buffers through CREP on nineteen farms protecting over 70,468 linear feet of stream bank, 1208 acres of karst with estimated sediment load reduction of 56,266.5 tons/year. Thirty-eight agricultural conservation plans were written on 6193.7 acres and 35 nutrient management plans for 3,401 acres were reviewed or written with 20,681 lbs/yr N managed, 248,491 lbs/yr P managed on 3,334 acres. Also, twenty-two watershed associations were provided technical and educational outreach support.

Other Activities

Sometimes components of base grants can be applied in other watersheds where there are no incremental efforts present. They serve to support the §319 program by addressing water quality issues but are not part of any larger effort. These are short term activities that are carried out through the WVCA with help from partnering agencies like NRCS, FSA, Conservation Districts and DEP.

Beech Fork Stabilization: *On the weekend of May 30 several volunteers from Boy Scout Troop #12 took part in a sediment erosion control project at Beech Fork State Park. The .2 acre denuded site has been plagued by a number of rills and gullies along the face of the slope for some time.*

Volunteers "dressed" the face of the slope by filling in the rills and gullies, secured erosion control blankets to the slope and seeded. Establishment of vegetation on the .2 acre site will eliminate an estimated 2.92 tons/yr from entering Beech Fork Lake.

Anthony Creek Stabilization: *The site is 170 feet long and was stabilized using a high performance turf reinforcement mat (TRM) and earth anchor system. A tree revetment utilizing on site materials and rock from a local quarry was used to stabilize the toe of the bank and anchor the TRM. Seedling trees were planted into the TRM, compost was utilized to cover the TRM and both over top and underneath of the mat, grass was planted.*

The total site covered 2,222 square feet and cost $9,228.75 and achieved a reduction in soil loss of 31.6 tons/year.

Lower Cheat River Watershed Project

The Upper Muddy Creek project (left) and the Jessop #1 project (right) on Pringle Run were completed in 2009.

The Lower Cheat River watershed based plan covers the Cheat River and its tributaries from Pringle Run to Cheat Lake at the WV/Pa border. The NPSP has been involved in the Lower Cheat since 1999 and the multi-organizational project team, the River of Promise (ROP), has been actively pursuing restoration of the Cheat River for more than 15 years. Improvement in the watershed has been noticeable, Cheat Lake use to have a pH near 4 with no fish but now averages above 7 and supports a good recreational fishery. Despite the improvement more work needs to be done, no tributary or the river itself has been fully restored.

Table 1: Metal Reductions 2005 to 2009

Lower Cheat Metal Reductions

Stream	WBP Load Reductions (lbs/yr)			Project Load Reductions(lbs/yr)			% of WBP
	Al	Fe	Mn	Al	Fe	Mn	
Sovern Run	15,300	35,370	1,800	25,100	7,996	3,140	69.06%
Greens Run	272,610	664,020	10,080	2,927	8,995	480	1.31%
Muddy Creek	36,180	85,050	3,510	39,440	71,748	4,016	92.36%
Morgan Run	129,600	297,540	14,100	820	3,740		1.03%
Pringle Run	36,450	78,480	8,370	5,684	3,637	4,891	11.53%
Totals	490,140	1,160,460	37,860	73,971	96,116	12,527	10.82%

The needs of the Lower Cheat are so large that the WBP was divided into phases. Phase I was scheduled to end in 2009. The total metal load reductions for all the sub-watersheds with projects are listed in Table 1. The specific projects listed for Phase I are listed in Table 2.

Table 2: Projects Implemented 2005 to 2009

Lower Cheat River WBP Implementation Phase I 2005 - 2009			
PAD #	Project	Funding	Status
5875	Pace, Pringle Run	319,OSM	Completed, upgrade planned
5947	Clark, Sovern Run	319,OSM	Completed, upgrade planned
5977	Tichnell, Sovern Run	319,OSM	Completed, upgrade planned
5948	Upper Muddy Ck	319, DMR	Completed
1820	Lick Creek	USCOE	Cancelled by USCOE
5784	Beaver Creek	319, OSM	Cancelled by landowner
1455	Valley Pt. 11		Not planned
1046	Muddy Ck Tipple	319, DMR	Completed
4542	Martin Ck Refuse	EPA	Delayed
3056	Jessop 1, Pringle Run	319, OSM	Completed
1770	Morgan Run	319, OSM	Completed
5899	NF Greens Run	319, OSM	Completed, upgrade planned
1048	NF Greens Run	319, AML	Completed
5785	Sovern 62	319, OSM	Completed

In addition to projects included in WBP

% Fully Implemented = 43%

% Implemented with upgrades planned = 28.5%

% Not Implemented = 28.5%

Projects Implemented vs. WBP scheduled = 83.3%

The activities conducted during FY 2009 towards implementation of the WBP are as follows:

Pringle Run – Jessop #1

Construction of the Jessop #1 Project was completed during 2009. The system consists of a leach bed that collects AMD from two different portals and a freshwater impoundment that collects higher pH water and contacts it with steel slag. The water from the leach bed and the freshwater combine in a mixing basin before the water is released into Pringle Run. The project is also equipped with a solar-powered Agri-Drain used to flush metal precipitates from the treatment system to prevent clogging.

Some post-construction monitoring has occurred by the use of a multiprobe monitor that was deployed at the beginning of September. However, only field chemistry results have been received from this site. Results from that monitoring show that the passive treatment system installed at the Jessop #1 location has reduced the acid load at the site by 134% (by going from an acid producer to an alkaline producer), iron by 93%, aluminum by 100%, and manganese by 90%. Total load reductions for this project are: 81,445 lbs/yr of acid, 4,620,lbs/yr of aluminum, 3,635 lbs/yr of iron and 4,891 lbs/yr of manganese. In addition to the snapshot sampling a sonde that provided data every fifteen minutes was deployed at the system out location. The pre-construction pH was 2.94 and conductivity was 1610, the sonde was deployed for approximately 3.5 weeks and showed an average pH of 6.06 and conductivity of 948.

Middle Fork of Greens Run Refurbishment

This has been the site of previous AML and 319 projects. A significant source to the Cheat River monitoring showed that 303,000 lbs/yr of aluminum and 738,000 lbs/yr of iron were still being

discharged into this tributary in 2005 after the projects. Once constructed, the Middle Fork of Greens Run Refurbishment project is expected to remove 121,215 lbs/yr of iron and 45,492 lbs/yr of aluminum.

Construction of this project is nearly complete. The system consists of two large collection ponds for metal retention. A freshwater impoundment was constructed. The freshwater is contacted with steel slag to raise its alkalinity and is mixed with the AMD in the collection ponds. One of the two retention ponds is currently being enlarged. Post-construction sampling will begin when construction is complete.

Muddy Creek (Dream Mountain Project)

Construction of the Dream Mountain project located on Muddy Creek is nearly complete. Two wetland cells have been constructed at the base of the hill as well as the majority of the limestone channel that will be used to convey and treat the mine water. The steel slag bed is also completed; however the steel slag has not yet been put in the bed.

Monitoring

The Friends of Cheat (FOC) has received 319 grants to monitor the Lower Cheat and its sub-watersheds as well as project specific monitoring. The objectives were to establish a baseline, determine environmental results and aid in planning additional projects.

FOC has been monitoring Pringle Run since 2007 and has completed a drainage basin assessment. The tributary is the first acid source to enter into the lower Cheat and is high on the AMD prioritization remediation list. The most significant loads are from the three headwater sites: Pase (16 %), Jessop Camp (23 %), and Blazer (35%). These streams contribute about 74 % of the acid load in Pringle Run. The remaining acidity is combination of seeps and open portals.

FOC discovered another major acid discharge on the South Fork of Greens Run. The discovery was a result of sharing information with Dr. Joe Donovan and the Hydrogeologic Research Center at WVU. His research of underground mine maps lead FOC to explore that area further.

Sovern Run is close to being removed from the 303d list. FOC has completed sweep data on the projects and the mainstem. In addition to the sweeps, FOC has conducted monitoring on the projects to see how effective the treatment systems are operating. FOC plans to install new projects in addition to reworking older projects in the Sovern Watershed. The Sovern 62 project is planned to go to construction early next spring. The Clark Project is planned to be refurbished by summer 2010 with monies from the SRF fund.

In summary Schwab, Morgan, Dream Mountain, Jessop, and Middle Fork of Greens Run projects were completed. Using state funds Schwab and Morgan were refurbishing projects. The Muddy Creek- Schwab rework included limestone leach bed repairs, adding new limestone, installing berms, and the installation of three agri-drains to improve the outflow. The Morgan Run project involved installing a catchment basin above the steel slag bed. The idea was to capture rainfall to

support the steel slag bed through the dry season. The basin is to help alleviate any sediment that could be entering into the steel slag bed. The project is reducing about 28% of the acid load, 43% of the iron load, and 21% of the aluminum load.

Outreach and Education

The FOC received a 319 AGO grant to support the construction of an educational facility. The Doug Ferris Outdoor Classroom situated at the FOC's festival site offers a unique setting for a variety of environmental learning experiences, including wetlands, acid mine drainage & treatment, riparian zones, stream bank restoration , invasive plant remediation, and wildlife habitat enhancement. Situated on the confluence of Muddy Creek and the Cheat River, this site offers two diverse waterways in regards to size & water quality, which presents a unique opportunity to compare these contrasting habitats. Muddy Creek is heavily impacted by AMD in its last 2 miles which presents an ideal stream laboratory to teach students how to identify and assess AMD streams through physical appearance, water chemistry, and lack of biological communities. Students will be able to compare this stream with Roaring Creek, which is a native Brook Trout stream that is located within walking distance of the festival site.

Initial construction of the open limestone channel that will treat the AMD discharge and serve as an educational exhibit.

In conjunction with the stream laboratory, there's a small mine portal on the site that was once used as a source of coal for homes in this old timber /railroad town known as Ruth Belle. This mine discharges a minimal flow of acid mine drainage with a pH of 3.89 and has low iron and aluminum concentrations. This area will also be used to identify & assess AMD, along with demonstrating alternative treatments. FOC will install a 115 ft open limestone channel that utilizes the existing wetland for sediment and metal collection. Signage will also be installed at this area to explain how AMD is produced and the reasoning for using limestone and other alkaline materials as a treatment medium. Construction on this facility started August 26, 2009.

Deckers Creek Watershed Project

An assessment of eroding stream banks was conducted in Deckers Creek in 2009.

Deckers Creek is a tributary to the Monongahela River. Deckers Creek and several of its tributaries are on the West Virginia 303(d) list and is part of the Monongahela River TMDL. West Virginia Department of Environmental Protection (WVDEP) is currently collecting data to support the revision of the TMDL for the tributaries to the Monongahela River.

Friends of Deckers Creek (FODC) is following a Watershed Based Plan to eliminate nonpoint source pollution and remove the conditions that impair the creek. Most of the pollution issues in Deckers Creek are related to acid mine drainage (AMD). The AMD comes from coal mines abandoned before 1977 and is considered nonpoint source pollution. FODC has completed projects in two subwatersheds, Slabcamp Run (SWS 23) and Upper Kanes Creek (SWS 206). In addition, FODC is working on three more projects in the Upper Kanes Creek subwatershed.

Table 3: Loads (lbs/year) calculated in the TMDL and measured before and after nonpoint source projects

Subwatershed Name and Number	Loads: TMDL	Loads: before projects	Loads: after projects
Upper Kanes Creek, 206	Al: 11,800 Fe: 53,000	Al: 14,400 Fe: 15,400 Acidity: 145,000	Al: 2,480 Fe: 2,700 Acidity: 20,700
Slabcamp Run, 23	Al: 41,900 Fe: 200,000	Al: 17,200 Fe: 8,450 Acidity: 168,000	Al: 12,300 Fe: 5,880 Acidity: 20,700

Valley Highwall #3 and Kanes Creek South #1

FODC has modified the design to an active AMD treatment system, which would be more dependable in its ability to treat the AMD than the passive vertical flow ponds proposed. FODC revised the proposals for Office of Surface Mining (OSM) Watershed Cooperative Agreement Program funding and recruited one more landowner to host AMD remediation activities. FODC advertised the project and held a pre-bid meeting for it.

Construction of the project is expected to be completed before March 31, 2010. The 319 funds will support six months of adjusting the doser to the proper lime delivery rate. After September 30,

2010, the project will be maintained with support from WVDEP Office of Abandoned Mine Lands and Reclamation.

Kanes Creek South Site #3 (KCS3) and Morgan Mine Road (MMR) AMD

FODC invited proposals from engineers for a passive or active system to treat the AMD at the site. All proposals for passive treatment projects exceeded the funding available through the original 319/ WCAP proposal. Additional funds were requested from the Division of Mining and Reclamation (DMR) in to support operations and maintenance at an active treatment site. FODC has been working with a private company to develop a mitigation plan. An active system will be installed that treats AMD from the KCS3 site, but also adds excess alkalinity to neutralize the AMD from the MMR site. Precipitates from KCS3 will be collected at the project. Precipitates from MMR will remain in the creek.

FODC is expecting to complete design of this project by March 31, 2010 and construct in by March 31, 2011.

Jen Zimmerman, the VISTA for FODC in 2008 and 2009, and Tristan Dennis, a member of the Youth Advisory Board for FODC, sampling benthic macroinvertebrates in Deckers Creek.

Sandy Run

OAMLR developed a project in the same area, primarily for the purpose of eliminating hazards associated with mine openings and highwalls. This project is currently in construction. As part of the project, collapsed portals will be sealed, and any AMD that discharges from them will be piped to the surface without interacting with spoil. Diversion of this water may eliminate a substantial amount of AMD that was originally a target of the proposed 319 work.

It is expected that the OAMLR project will be completed by March 31, 2010. FODC will then monitor to determine any change in AMD loads, select a design engineer, and construct an AMD remediation system by September 30, 2011.

Monitoring

FODC is also conducting monitoring projects using 319 funds from FY'07. The project includes three tasks: continuing a long-term monitoring program assessing water quality at thirteen sites in the watershed at quarterly intervals; making additional measurements of water quality in Deckers Creek between Reedsville and Masontown, where additional information about AMD loads is needed; and assessing streams in the watershed for damage by sediment, especially from bank failure. FODC has carried out one quarterly monitoring sweep and one survey of fish communities at thirteen sites and completed one trip monitoring the AMD sources to Deckers Creek.

Lamberts Run Watershed Project

Site 9 during (left) and after (right) construction.

Lambert Run is an 8 sq mile watershed located near Clarksburg, WV. It has been dominated by deep mining since the 1950s. Most of the mining performed in the watershed was to extract the Pittsburgh coal seam with water chemistries that vary from acidic to alkaline mine drainage. In 2003 the first EPA approved watershed-based plan in WV was for Lamberts Run. The plan allowed the watershed group to pursue funding for passive treatment remediation of the mine discharges in the watershed. In 2004, The Guardians of the West Fork (GWF) formed a partnership with the WVDEP, OSM and NMLRC to start working towards restoration of multiple sites by installing passive treatment systems. Since 2004, there have been four passive systems installed in the Lambert Run watershed.

Site 3 was constructed in 2006, and was the first of the four projects completed. Before treatment, Site 3 was a mildly acidic, metal laden mine discharge. After treatment, the Site 3 discharge is now alkaline with very low metal concentrations. This project has significantly improved the mainstem of Lambert Run by removing a source of metals and acidity. (See reductions for all sites in Table 4)

The discharge from Site 9 was white with aluminum before treatment.

The treatment system for Site 8 was constructed in 2007. This site is alkaline in nature, which means the main focus of the treatment was to precipitate out the metals from the mine drainage through oxidation. Treatment for this site consisted of routing the mine water from the collapsed portal and the seep into a 3.5 acre wetland. The level of the water within the wetland is controlled by a solar powered Agri-Drain. After treatment of Site 8, alkalinity has increased and all metal concentrations have decreased. In conjunction with the treatment system at site 9, Site 8 has remediated an entire tributary of Lambert Run.

The treatment system at Site 9 was completed in 2009. Before construction, the site consisted of a seep and an abandoned block building. The seep discharged approximately 400 gallons per minute (gpm). The treatment system at Site 9 is performing very well. Before construction, site 9 used to contribute roughly 60 mg/L of acidity to Lambert Run. It is now alkaline water and metal concentrations have also been lowered significantly.

The Site 6 project has been approved for 319 funds and should, in combination with the previous projects restore most of Lamberts Run. The big obstacle to full restoration is Site 7 which will require an active treatment system requiring operation and maintenance funding.

Table: 4

Lamberts Run Reductions vs. Loads from WBP

Project Site	WBP Load Reductions (lbs/yr)			Reduced Load (lbs/yr)			% Metals
	Aluminum	Iron	Manganese	Aluminum	Iron	Manganese	Reduction
1/2	100	16,500	4,920				0.00%
3	1,740	3,600	1,840	3,600	31,740	1,560	513.93%
4	0	2,900	740				0.00%
5	900	17,680	8,260	1,480	12,300	0	51.34%
6	2,000	23,020	4,300				0.00%
7	1,400	303,400	39,200				0.00%
8/8A	540	23,950	5,000	2,120	33,240	0	119.91%
9/9A	20,440	69,340	10,520	6,560	21,200		27.68%
Totals	27,120	460,390	74,780	13,760	98,480	1,560	20.24%

Table: 5

Lamberts Run WBP Implementation

TMDL SWS	Systems Needed	Systems Installed	% Implementation
1901	1	0	0%
1902	0	0	0%
1903	2	1	50%
1904	3	2	67%
1905	2	1	50%
Totals	8	4	50%

North Fork of Elkhorn Creek Watershed Project

From left to right: *Installing septic tank between home and the main collection line; Wetland cells with mulch on top and a new fence:*

The Wastewater Treatment Coalition of McDowell County (WTCMC), Canaan Valley Institute (CVI) and the WVDEP NPSP have been working to implement projects within the North Fork of Elkhorn Creek watershed identified in the approved watershed based plan. They are currently handling two separate 319 grants to help implement elements of the North Fork of Elkhorn Creek Watershed Based Plan (WBP).

The Ashland Wastewater Project:

This project is equipping 23 homes and two businesses with a viable onsite wastewater treatment system for the first time. It is eliminating the community's practice of dumping raw sewage into the North Fork of Elkhorn Creek. The cluster wastewater system was nearing completion by October. The wetlands were installed and fenced in, the road was repaved, and individual hook-ups were in progress. The overall system was tested and full implementation was completed by the end of October. The only remaining items to be installed are the plants for the wetland cells that will be planted this spring.

The system was designed to address wastewater issues in narrow stream valleys, where space for conventional

The Ashland Project required 100% participation from Ashland residents. Every resident and business had to voluntarily agree to participate, form a utility and agree to a monthly charge before any permit could be issued.

This project has spurred further community improvements as Ashland hopes to encourage tourism. The town is the location of a trail access point for the Hatfield – McCoy ATV Trail and Elkhorn Creek, is known as a trophy trout stream.

septic systems is limited. CVI developed the concept for the Ashland project, which is the first system of its kind in West Virginia. This system is expected to reduce fecal coliform loads by 4.11E+13 cfu/year and restore Windmill Gap Branch to water quality standards. Monitoring in the spring will determine the success of this first phase of the North Fork Elkhorn Creek project.

Individual Onsite Systems

Safe Housing and Economic Development (SHED) has been a very valuable partner to the WTCMC acting as the fiscal agent for the 319 grants and the Onsite Loan Program (OSLP) that offers a low interest loan to residents who need to upgrade or install a wastewater system at their home. The original plan was to install 25 systems but several obstacles had to be over come. Some homes didn't pass the perculation test needed for a system, some residents couldn't provide the proper documentation needed for the loan, and every homeowner had to be convinced to voluntarily sign up for the program. Currently, seven systems have been installed as of the end of September. Funding spent so far is $27.290.50 in 319 grant funds, $16,771.75 in OSLP funds for a total of $44,062.25.

Crumpler Project

The WTCMC has had preliminary soil testing done at a potentail site for wastewater treatement and the soils look good. However, past landuses at the site suggest the possiblity of contamination. A Brownfields grant has been applied for to do a Phase 1 assessment to evaluate deeds and landuse history. WVU's Engineers Without Borders did provide the WTCMC a Preliminary Engineering Report that gave a starting point at determining the best treatment.

FY 04 Outdoor Classroom at Mount View High School in Welch, WV:

As a part of the outreach effort a small 319 grant was given to WTCMC for the construction and support of an outdoor classroom at the local high school. The first round of tree plantings and the raised beds were constructed. Over the summer the coordinator worked with students to teach them about their natural environment.

Left to Right: *Planting in April '09 for Earth Day and afterschool activity in the outdoor classroom.*

In the watershed based plan 409 structures were classified as unsewered, with the 32 now on functioning onsite systems that equals an implementation rate of 7.8%.

Lost River Watershed Project

The first natural stream bank restoration project on Lost River. Before (left), After (right)

The Lost River 319 Water Quality Project has the WVCA working closely with USDA NRCS to target landowners who qualify for the Conservation Reserve Enhancement Program (CREP) and encourage buffer installation and alternative watering options. The carrot for participation is the possibility for CWA 319 stream bank restoration dollars to slow down bank erosion.

The WVCA project manager designed and installed a 1.5 acre buffer along Links Run. The buffer was designed to enhance wildlife and demonstrated the feasibility of allowing the landowner to plant the trees himself while utilizing the cost-share rate for larger and better tree stock. Two-hundred linear feet of stream bank was protected with this plan. Nutrient management planning was a component of this project as well.

Table: 6

Lost River Load Reductions WBP vs. Implemented

Pollutant	WBP Reductions	Estimated Reductions	% Reductions
Nitrogen (lbs/yr)	29,954	1230	4.11%
Phosphorus (lbs/yr)	2,700	4739	175.54%
Sediment (tons/yr)	5,300	769	14.51%
Fecal coliform CFUs/yr	2.39E+17	2.14E+14	0.09%

In March the finishing touch was put on the first stream bank stabilization demonstration project completed in 2008 with the establishment of a six acre woody buffer. Over twelve-hundred willows, dogwoods and other appropriate streamside trees and shrubs were planted at the site. BEHI surveys showed that 24 tons of sediment are being eroded from the site post construction. This is contrary to the 793 tons being lost annually before implementation.

A second bio-engineering stream bank stabilization project was completed. 250 feet of eroding stream bank was stabilized using bank-sloping, bio-engineering products and stabilizing toe of slope with rock. The intent of this project was to utilize low-cost stream restoration techniques versus more costly natural stream restoration or rip-rap. After stabilization, stream bank exclusion and pasture division fencing was installed allowing livestock rotation, the estimated fecal reduction is $5.62x10^{14}$ cfu/year. A nutrient management plan was developed that manages 1230.3 pounds of N and 4,739.28 pounds of P.

Baker High School students help WVDNR with a fish shocking survey of Bear's Hell Run.

In addition to the WVCA stream bank projects, NRCS has installed 11,840 feet of stream exclusion fencing. Over 3000 feet of the fencing was used to protect 6.3 acres of new woody riparian buffers.

Outreach is an important component of the project, presentations were made to reach 78 people and site tours were given for the Director of the Chesapeake Bay Program, representatives of Senator Robert Byrd and 23 other agricultural officials. Working with the Baker High School, an Earth Team Volunteers group was established to support the efforts. These volunteers joined with WV Division of Natural Resources, Baker Run Conservation Society, and USDA NRCS to electroshock in Bear's Hell Run for bio-mass and species present.

Table: 7

Lost River WBP Implementation

BMP	Units	Units Planned	Units Installed	% Goal
Land Retirement	Acres	500		0.0%
Animal Waste Facility	structures	13	1	7.7%
Tree Planting	Acres	50		0.0%
Nutrient Management	Acres	500		0.0%
Off-stream Watering w/Fencing	Units	10	3	30.0%
Off-stream Watering w/Fencing & Rotational Grazing	Units	20	1	5.0%
Riparian Buffers	Acres	100	28	28.0%
Natural Stream Restoration	Linear Feet	10,000	1,750	17.5%
Totals		11,193	1,783	15.9%

Sleepy Creek Watershed Project

An Eljen drain system for a newly installed septic system on Sleepy Creek.

Sleepy Creek watershed is located in Morgan County, WV (87%) and Fredrick County, Va (13%) and flows 42 miles north into the Potomac River. Within the watershed two streams have a TMDL, Sleepy Creek and Indian Run. Both are impaired for fecal coliform bacteria. This project has only been operational for one year. The stakeholder state agencies joined with the Sleepy Creek Watershed Association, the Eastern Panhandle Conservation District and the Morgan County Health Department to form a project team to implement the WBP.

One of the first goals was to hold a public workshop on the effects of wastewater pollution on a watershed and the proper maintenance and care of an onsite wastewater (septic) system. Those who attend the landowner workshop received a 50% coupon to get their individual sewer systems pumped. The goal of the workshop was to sign up 25 landowners to upgrade/fix failing individual sewer systems.

Before taking contracts the project team sponsored a septic installers workshop on January 22, 2009 attended by 60 people. The project team also announced the start up of the septic pumping coupon program. This summer the project team with help from the Morgan County Health Department has seen 17 different systems designed and completed. In addition 40 residents have taken advantage of the coupons to have their septic tanks pumped. Each resident that takes advantage of this program is also given educational materials on how to properly maintain a septic system. The total estimated reduction of fecal coliform is $5.75x10^{13}$ cfu compared to the WBP goal of $1.18x10^{13}$ cfu for the first year. The systems installed and pumped during 2009 represents 12.6% of the septic component of the WBP.

One goal for 2010 is to implement more urban practices such as tree plantings and stormwater management control. The project team has been in contact with the Cacapon State Park for ideas of installing a porous pavement parking lot at the Lodge and is working closely to come up with a design. An agricultural project is also being prepared.

Mill Creek of Opequon Watershed Project

The Conley Project before (left) and after (right).

The Mill Creek watershed headwaters are in Virginia, but most of Mill Creek is located in the southeastern part of Berkeley County. It is 14.5 miles long (one mile of which is in Virginia), and its watershed covers 29.75 square miles. Mill Creek and Torytown Run are on the 303(d) list for biological impairment, with organic enrichment and sedimentation determined to be the biological stressors. These two streams are listed for fecal coliform impairment as well. Therefore, Mill Creek and Torytown Run received total maximum daily load (TMDL) allocations for sediment and fecal coliform. Sylvan Run is listed for biological impairment only, and the biological stressor is sedimentation. Therefore, Sylvan Run received a sediment TMDL.

Two projects are focusing on Mill Creek, the Conley Natural Stream Design Project funded from FY 2006 319 funds and the Mill Creek Project using FY 2009 319 funds. Only the FY 06 funds were actually available during FY 2009 therefore only the Conley Project was implemented.

Conley Natural Stream Design Project

This project was intended to reduce the sediment load in Mill Creek of the Opequon Creek watershed. The design and construction of a natural stream restoration project on approximately 1225 feet of Mill Creek near the headwaters is expected to reduce the total sediment load entering the creek by 205.3 tons/year.

The project was completed during 2009 requiring that a restoration plan be developed and all permits were received, a contractor was selected, drawings were finalized and staked out in the field for the contractor and then construction.

Mill Creek of the South Branch Watershed Project

The Mill Creek watershed is located within both Grant and Pendleton counties of West Virginia and includes North & South Mill Creeks as well as the Mill Creek main-stem. The watershed is predominantly in agricultural production and forestland with minimal urban presence. This watershed has been deemed as a "priority watershed" by the West Virginia Chesapeake Bay Implementation Committee.

A 1998 TMDL reported the need for fecal coliform contamination to be reduced by 37.7% to achieve the state water quality standards. Best Management Practices (BMP's) have been selected to help reach this reduction goal. These practices encourage landowners to install or protect riparian buffers and provide alternative watering through the existing USDA Conservation Reserve Enhancement Program (CREP), relocate and install animal waste storage structures/systems, control feedlot runoff, restore wetlands and upgrade failing septics.

Mill Creek Project incremental funding became available August 2009, still much groundwork had already been completed in anticipation of funding. This included the public opinion survey that was completed in March of 2007. Several demonstration projects were completed in cooperation with WV's Chesapeake Bay Program and have included three alternative watering projects that were inclusive of livestock exclusion from the stream. A targeted septic pumping program was conducted during the spring of 2009 and assisted 25 homeowners in pumping their systems. Each participant then received an informational packet on septic maintenance. A demonstration raingarden was installed at the local elementary school involving the children and a rain barrel was donated for educational purposes. This watershed is also a targeted area for the Chesapeake Bay Program and has allowed for much foundation work. The BMPs installed in 2009 include:

- Woody Buffers - 21.9 acres
- Grass Buffers - 186.5 acres
- Alternative watering - 9 systems
- Streambank fencing - 1690 linear feet
- Alternative water - 3 systems
- Septic pumped - 25 systems
- Septic upgrade - 1 system

Carla Hardy of the WVCA directs the placement of fiber logs to stabilize the eroding stream bank.

The total reductions calculated for fecal coliform are 4.42×10^{13} cfu. Despite the late award of 319 funds this project achieved 8.7% of the needed load reductions to implement the WBP.

The NPSP still remains one of the most popular programs in West Virginia focusing on stream restoration. Challenges are still immense for achieving the mandated goal of complete restoration. As the Morris Creek example shows major improvements can be made and life returns to the stream, but hitting that chemical criteria for removal from the 303(d) list can still elude the program and its partners. Yet for most citizens, the return of fish is the primary goal.

One challenge noted in the FY 2008 annual report was the anticipated growth in natural gas drilling in WV, especially in the Marsellus Shale deposits. This last year has seen a "gold rush" for natural gas drilling with some severe environmental consequences. Most of this activity is regulated and won't involve the NPSP but issues of sedimentation from disturbed ground due to well and road construction and maintenance activities will be an issue for the Program.

Watershed planning is evolving into a much more sophisticated and complicated process. The days of funding the development of a watershed based plan (WBP) for $10,000 are coming to a end. The Elk Headwaters protection plan will cost over $80,000 before it's finished. Even a predominately agricultural watershed like Muddy Creek in the Greenbrier will cost $35,000. Also, producing a watershed plan, that doesn't meet EPA's A – I criteria, for the entire Coal River without expensive consultants is proving to be difficult. As different funding sources are being brought into the restoration effort a good watershed plan is becoming critical and more expensive.

On May 12, 2009 President Barak Obama issued an Executive Order making restoring the Chesapeake Bay (CB) a national priority. To be involved in a national priority restoration effort is certainly an exciting prospect for the NPSP. How it will impact the Program is yet to be determined. Each state and the District of Columbia must develop a Chesapeake Bay Plan with definite scheduled milestones. EPA will evaluate whether the state's plan is sufficient. There are some serious issues that could have an adverse impact on the NPSP depending on how EPA implements this Executive Order.

The first issue is which agency from the state will have primary responsibility for developing, submitting and implementing the CB plan? The NPSP has experience in watershed planning with four WBPs in the CB drainage and was a partner in the development of the Potomac Tributary Strategy. However this plan will require a massive effort and multiple partners to have any chance of success. Secondly, will additional resources be provided to take on this effort? Additional CB funds and possibly additional §319 funds are expected but will it be enough to handle the additional responsibilities. Already NPSP personnel are straining to plan and implement incremental projects. To make the situation worse the Program in both DEP and the WVCA is going through a period of relatively high staff turnover. This is due to the low pay, lack of advancement opportunities and no pay raises for six years for state employees coupled with an increasing level of responsibility. Additional responsibilities without additional resources could

exacerbate this trend. Finally and possibly of most concern, is the issue of consequences if the state does not meet EPA goals. One of the consequences mentioned in the strategy for implementing this order is to withhold environmental grant funds such as §319. If this came to pass it would add hardship to the very people trying to develop and implement the plan while doing nothing to those entities who may hope that no plan gets developed and do their best to obstruct it. In addition it could impact watershed associations and restoration efforts outside the CB, most of the state, causing a backlash against the CB effort.

Finding non-federal match for §319 dollars has always been a problem. WV, like most states, is keeping a close watch on its budget. The legislature can't afford to put state general revenue funds into restoration projects. Other sources have to be found and the various project managers must be innovative. One important source of match for AMD sources was the Watershed Cooperative Agreement Program (WCAP) but this source was taken away in 2007 due to a change in the law. Watershed associations in WV contacted members of Congress to convince them to restore this important source of matching funds and it was restored.

Another funding source for AMD and some stream channel restoration projects could be mitigation funds from mining and non-mining sources. In 2009 a partnership between the NPSP and the Mining and Reclamation Division in DEP was formed. In some cases mitigation can be brought into a NPSP project but in some cases the program may go where the mitigation funds are directed. Several years ago an In-Lieu Fee Program was developed for non-mining mitigation needs. This funding is not eligible for match but could still be used as a supplement for §319 funds. A FY 2010 project, the Summerlee AMD Project, may be the first to form such a partnership of funding programs. Discussion and planning were just started late this year.

The prospects for the future of the NPSP could be very promising if the support it needs is provided. The personnel in the Program are dedicated and gaining expertise. Where additional expertise is needed the pool of qualified consultants is growing. The Program is gaining notoriety with the public by supporting projects that enhance the quality of life for local residents. Noticeable improvements in watersheds such as Lamberts Run, Morris Creek and the Cheat River where life has returned to previously dead streams and bringing wastewater treatment to the residents of the North Fork of Elkhorn Creek, which has spurred a movement for community improvement, has made the NPSP a vital player for the people of these watersheds. For the future, there is still so much more that needs to be done.

Nonpoint Source Program Goals for 2010

1. Complete all FY 2005 and 2006 incremental projects.

2. Submit four new WBPs to EPA for approval.

3. Conduct fourteen WVSOS training workshops.

4. Provide nonpoint source outreach and education to 4,000 people.

5. Play a vital role in the development of the Chesapeake Bay and Coal River watershed plans.

Appendix

WEST VIRGINIA

NON-POINT SOURCE PROGRAM

GRANT FUNDS: 319(h)

BUDGET PERIOD FY 2009

OCTOBER 1, 2008 THROUGH SEPTEMBER 30, 2009

BASE PROGRAM	FEDERAL	STATE	TOTAL
WV DEP			
WATER & WASTE MANAGEMENT	**$654,400**	**$436,267**	**$1,090,667**
OIL & GAS	**$60,000**	**$40,000**	**$100,000**
WV CONSERVATION AGENCY	**$310,000**	**$207,000**	**$517,000**
TOTALS	**$1,024,400**	**$683,267**	**$1,707,667**

INCREMENTAL PROGRAM			
KITCHEN CK OF SECOND CK	**$108,523**	**$72,350**	**$180,873**
MILL CK OF SOUTH BRANCH	**$174,000**	**$123,093**	**$297,093**
MILL CK OF OPEQUON	**$448,081**	**$299,722**	**$747,803**
GUINN PORTAL	**$150,000**	**$100,000**	**$250,000**
CANES CK OF CABIN CK 1	**$150,000**	**$100,000**	**$250,000**
WATERSHED BASED PLANS	**$72,596**	**$48,398**	**$120,994**
TOTALS	**$1,103,200**	**$743,563**	**$1,846,763**

Active Nonpoint Source Program Projects in FY 2009

Project	FY	Primary Category	$319	Status
Ashland	2005	Septics	$231,650	Completed
MUB (Burroughs Run)	2005	Stream banks	$250,000	Completed
Muddy Creek	2005	AMD	$352,355	Completed
Morris Creek Phase I	2005	Stream banks	$41,139	Completed
N.F. Elkhorn OSP	2005	Septics	$82,500	On Schedule
Morris Creek Phase II	2006	Stream banks	$277,600	Planning
Kanes Creek South	2006	AMD	$237,694	Planning
Lost River	2006	Agriculture	$215,682	On Schedule
Watershed Planning	2006	Planning	$40,000	Completed
Little Sandy Assessment	2006	Gas Roads	$16,542	Not Started
Pecks Run	2006	Septics	$11,750	Completed
Conley NSCD	2006	Stream banks	$96,887	Completed
Sovern 62	2006	AMD	$150,000	Planning
Smooth Rock Lick #1	2007	AMD	$64,401	Not Started
Lost River 2	2007	Agriculture	$452,604	On Schedule
Morgan Mine Rd	2008	AMD	$300,000	Planning
Ury Wastewater	2007	Septics	$136,000	On Schedule
Albert Highwall	2007	AMD	$62,050	Completed
Losing Ground	2007	Outreach	$37,000	Completed
Sandy Run/Kanes Ck	2007	AMD	$298,925	On Schedule
Smooth Rock Lick #2	2008	AMD	$122,930	Planning
Muddy Creek	2008	AMD	$115,521	Planning
N. F. Greens Run	2008	AMD	$150,000	Planning
Pringle Run	2008	AMD	$150,000	Planning
Sleepy Creek	2008	Septics	$292,552	On Schedule
Kitchen Creek	2009	Agriculture	$108,523	On Schedule
Mill Cr. South Branch	2009	Agriculture	$174,000	On Schedule
Mill Cr. Opequon	2009	Septics	$448,082	On Schedule
Guinn Portals	2009	AMD	$150,000	On Schedule
Cane Fork	2009	AMD	$150,000	Not Started
Watershed Planning	2009	Planning	$72,595	On Schedule

2009 AGO Projects				
Project	***Grantee***	***319 $***	***Match***	***Status***
Wydmyer Wetland Restoration	Eastern Panhandle CD	$11,992	$7,995	Revised
Decentralized Wastewater Solutions	National Environmental Services Ctr	$27,972	$19,029	Completed
McDowell Outdoor Classroom	McDowell County Wastewater Coalition	$11,130	$13,000	Completed
Monitoring NPS	Friends of Deckers Creek	$13,200	$8,800	On Schedule
Mulch & Alternatives on Skid Roads	WVU Appalachian Hardwood Ctr	$35,000	$23,334	Completed
ReStore Rain Garden	Habitat for Humanity	$5,917	$4,010	Completed
Twelve Mile Restoration	Horseshoe Run Watershed Assoc.	$20,105	$13,404	Completed
Water in a Karst Area	Greenbrier River Watershed Assoc.	$10,000	$6,666	Completed
Urban Stormwater Demonstration	Opequon Creek Project Team	$20,000	$13,334	Completed
Maple Lake		$18,872	$12,582	On Schedule
Blood Lagoon	Friends of Cheat	$15.58	$10,386	Completed
GRWA karst education	Greenbrier River Watershed Assoc.	$10,186	$6,791	On Schedule
UGWA rain garden	Upper Guyandotte Watershed Assoc.	$6,000	$4,000	On Schedule
Washington HS rain garden	Eastern Panhandle CD	$11,770	$7,847	On Schedule
Mountain Inst. Stream Monitors	Mountain Institute	$11,109	$7,406	On Schedule
PAN Fayetteville HS rain garden	Plateau Action Network	$11,639	$7,759	On Schedule
Piney Ck pet waste & rain garden	Piney Creek Watershed Assoc.	$17,462	$11,641	On Schedule
PV Audubon watershed education	Potomac Valley Audubon	$25,000	$16,667	On Schedule
HCB Stormwater	Highlands Community Builders	$33,614	$22,409	On Schedule
Pennsboro Trailhead Pourous Pave	Ritchie Co Hist Society	$12,682	$8,455	On Schedule
D. Ferris Outdoor Classroom	Friends of Cheat	$15,000	$10,000	On Schedule
Totals		$328,666	$235,515	

Watershed Based Plans Cost Estimates

ID	Watershed	Year Approved	Pollution Sources	319 Funds	Match Needed	Total Projected Costs	% Implem.
1	Second Creek	2009	Agriculture	$765,792	$510,527	$1,276,319	0.0%
2	Mountwood Lake	2009	Streambanks	$946,644	$631,096	$1,577,740	0.0%
3	Wolf Creek	2009	AMD	$10,944,000	$7,296,000	$18,240,000	0.0%
4	Martin Creek	2008	Septics	$238,680	$189,120	$427,800	0.0%
5	Mill Cr Opequon	2008	Septics, Streambanks	$3,195,592	$2,130,394	$5,325,986	3.2%
6	Mill Cr South Branch	2008	Agriculture	$558,900	$372,600	$931,500	8.7%
7	Sleepy Creek	2008	Septics, Streambanks	$2,879,406	$1,919,604	$4,799,010	1.0%
8	N. F. Elkhorn Ck	2007	Septics	$2,878,248	$1,918,832	$4,797,080	7.8%
9	Upper Guyandotte	2006	Septics	$5,940,000	$3,960,000	$9,900,000	0.0%
10	Burroughs Run	2005	Urban, Streambanks	$250,000	$2,601,760	$2,851,760	100.0%
11	N. F. Blackwater R.	2005	AMD	$3,312,000	$2,208,000	$5,520,000	10.0%
12	Three Forks Ck.	2005	AMD	$4,428,000	$2,952,000	$7,380,000	0.0%
13	Lost River	2005	Agriculture, Streambanks	$787,308	$524,872	$1,312,180	15.9%
14	Lower Cheat R.	2005	AMD	$12,954,000	$8,636,000	$21,590,000	83.3%*
15	Deckers Creek	2005	AMD	$3,540,000	$2,360,000	$5,900,000	3.0%
16	Lamberts Run	2004	AMD	$867,000	$833,000	$1,700,000	50.0%
17	Morris Creek	2004	AMD	$1,200,000	$800,000	$2,000,000	83.0%
18	Lower Elk R.	2004	Roads, Streambanks	$938,312	$625,540	$1,563,852	90% **
19	Upper Buckhannon	2004	Mixed	$1,290,000	$860,120	$2,150,120	ND
20	Finks Run	2004	Mixed	$257,782	$171,856	$429,638	ND
21	Pecks Run	2004	Mixed	$211,443	$140,953	$352,396	ND
22	Upper Elk R.	Not submitted	Development, Septics				
23	West Run	Not approved	AMD				
Total WBP Implementation Estimate				**$58,383,107**	**$41,642,274**	**$100,025,381**	

This represents the estimated costs of WBP implementation and has not taken into account projects already implemented.

* This is only for Phase I. Later phases were not put on a specific schedule

** Most of the projects listed in WBP have been completed. In comparison to total estimated cost only .08% has been applied for.

Load Reduction Estimates for Projects Completed in FY 2009

Project Load Reduction Estimates

Fiscal Year 2009, October 1, 2008 to September 30, 2009

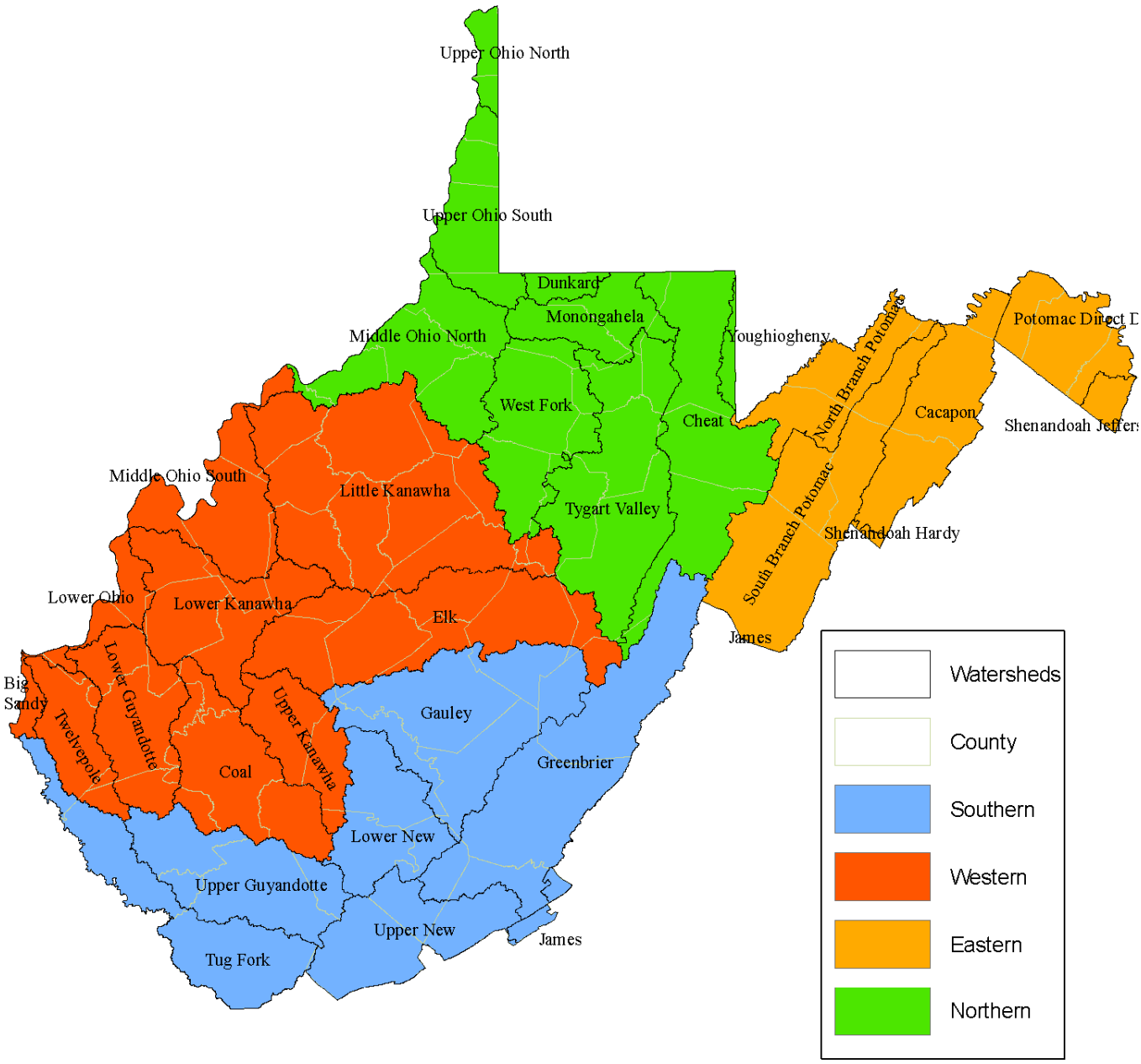
All units are in tons/year except Fecal coliform in cfu

FY	Project	Sediment	N	P	Fe	Al	Mn	Acid	Fc
2004	Lamberts Site 9				10.6	3.3			
2005	Pringle, Jessop 1				1.8	2.3	2.4	40.7	
2005	Ashland OSLP								1.15E+13
2006	Conley NSCD	205.3							
2006	Lost River	769	0.615	2.37					2.14E+14
2008	Sleepy Creek								5.75E+13
2009	Mill Ck of South Br.								4.42E+13
2009	WVCA	56,300	10.3	124.2					
	TOTALS	57,274.3	10.9	126.57	12.4	5.6	2.4	40.7	3.272E+14

* 2004 Lamberts Site 9 was completed in 2008 and monitored in 2009.

* * WVCA estimates includes the Stream Restoration Program within that agency and mini-grants to other organizations (page 10).

West Virginia Stream Partners and Nonpoint Source Program Regional Divisions



Regional Basin Coordinators

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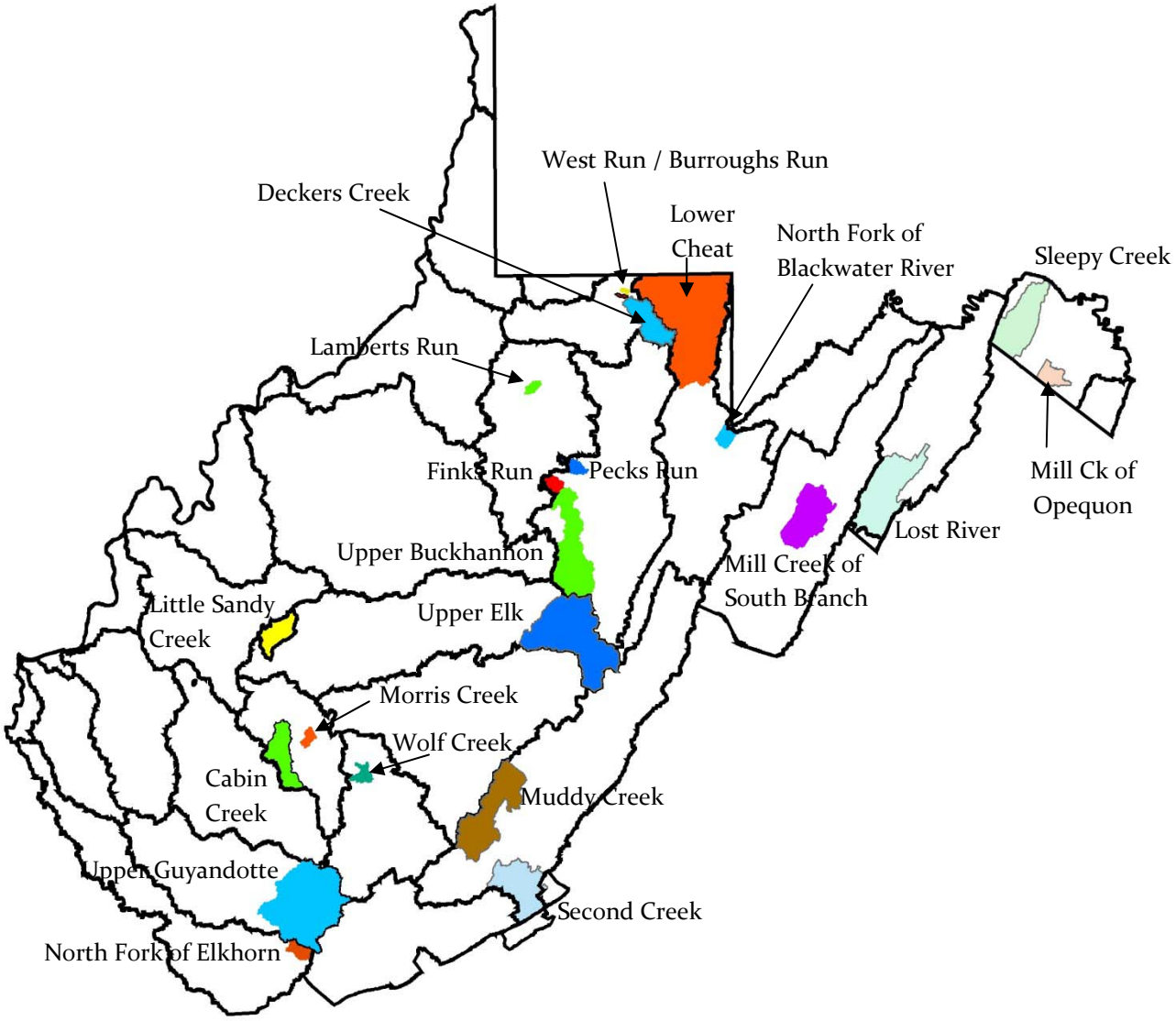
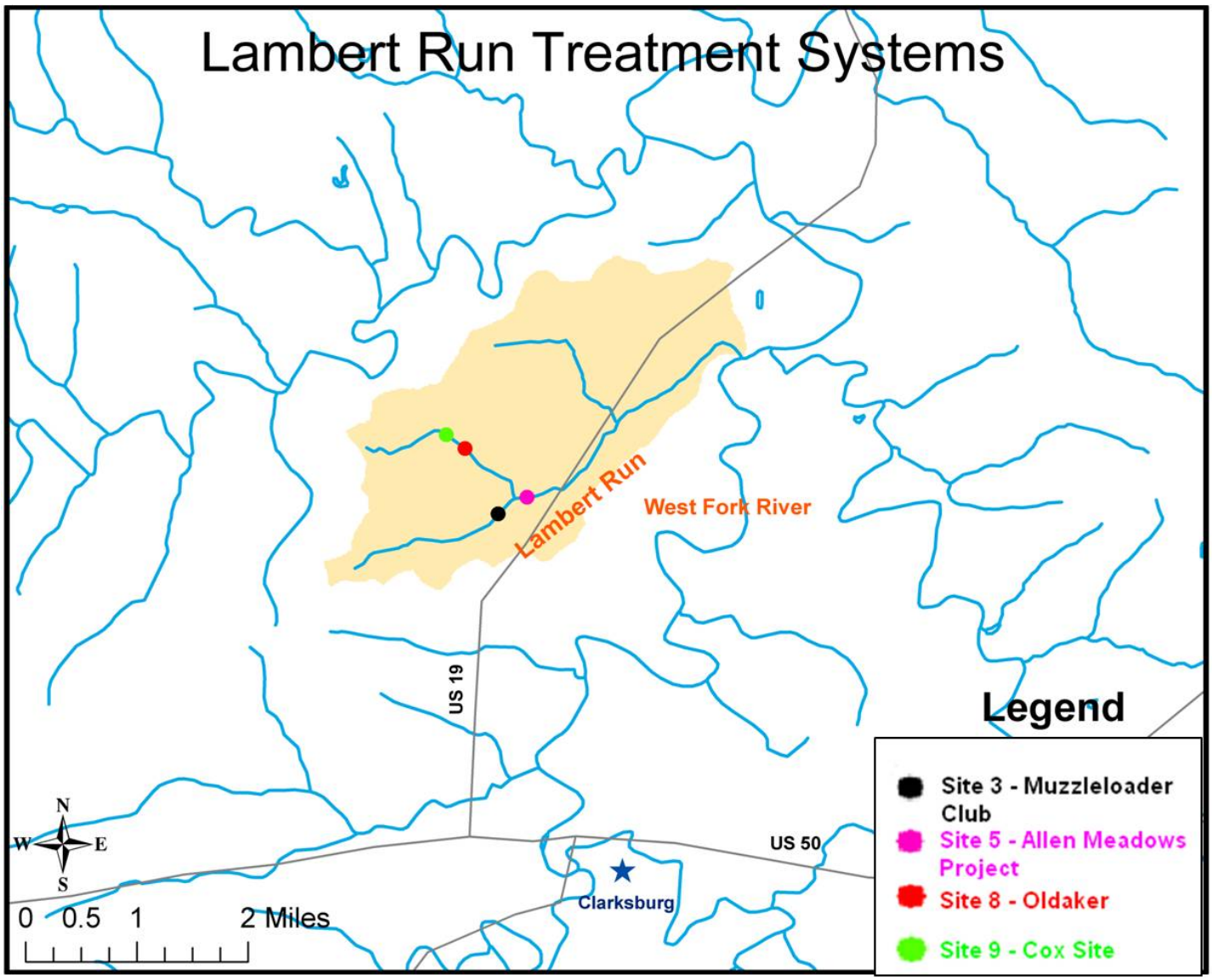
Eastern - Alana Hartman	alana.c.hartman@wv.gov	(304) 822-7266 ext. 3626
Northern - Lou Schmidt	louschmidt@frontiernet.net	(304) 783-4935

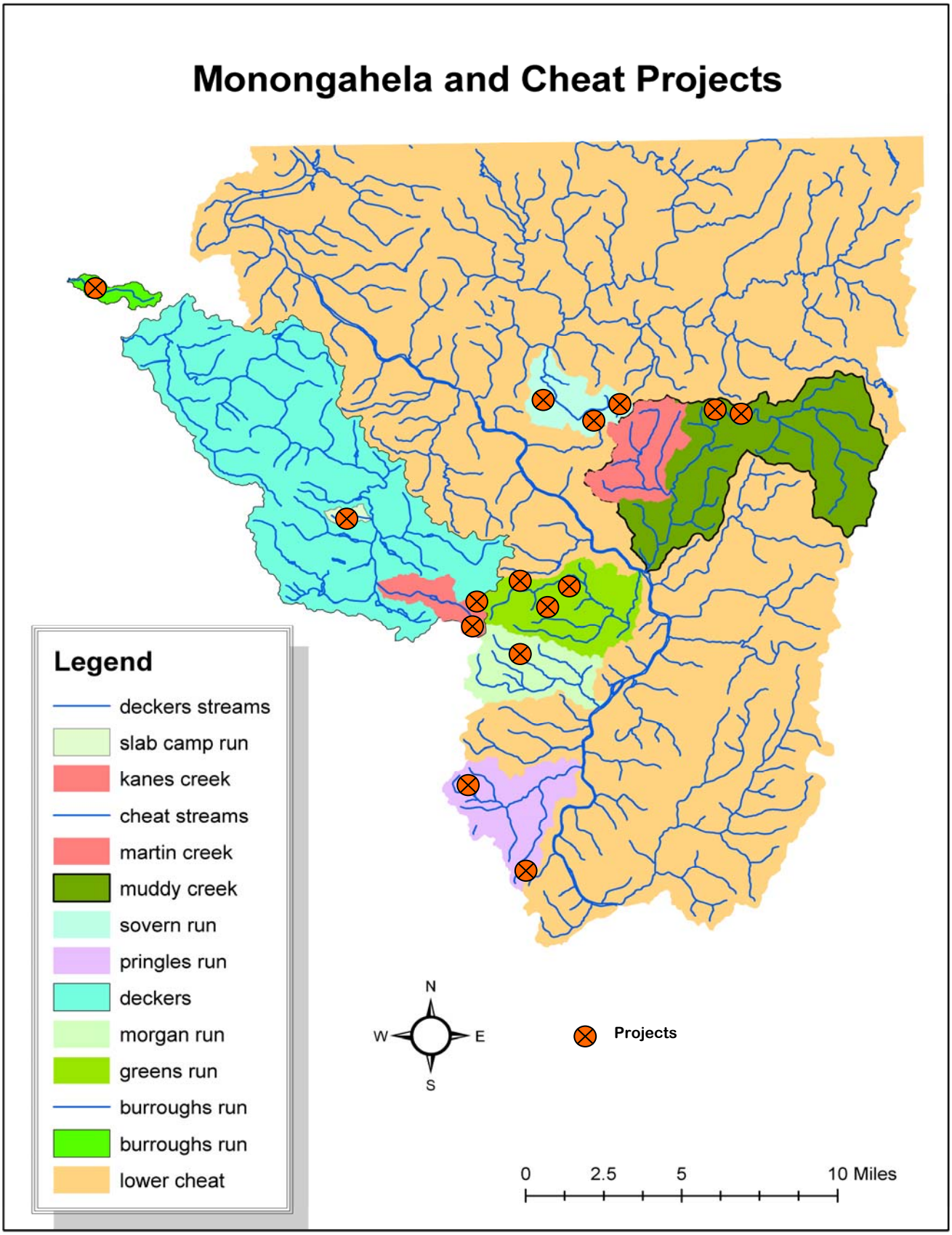
West Virginia

Nonpoint Source Program Activity

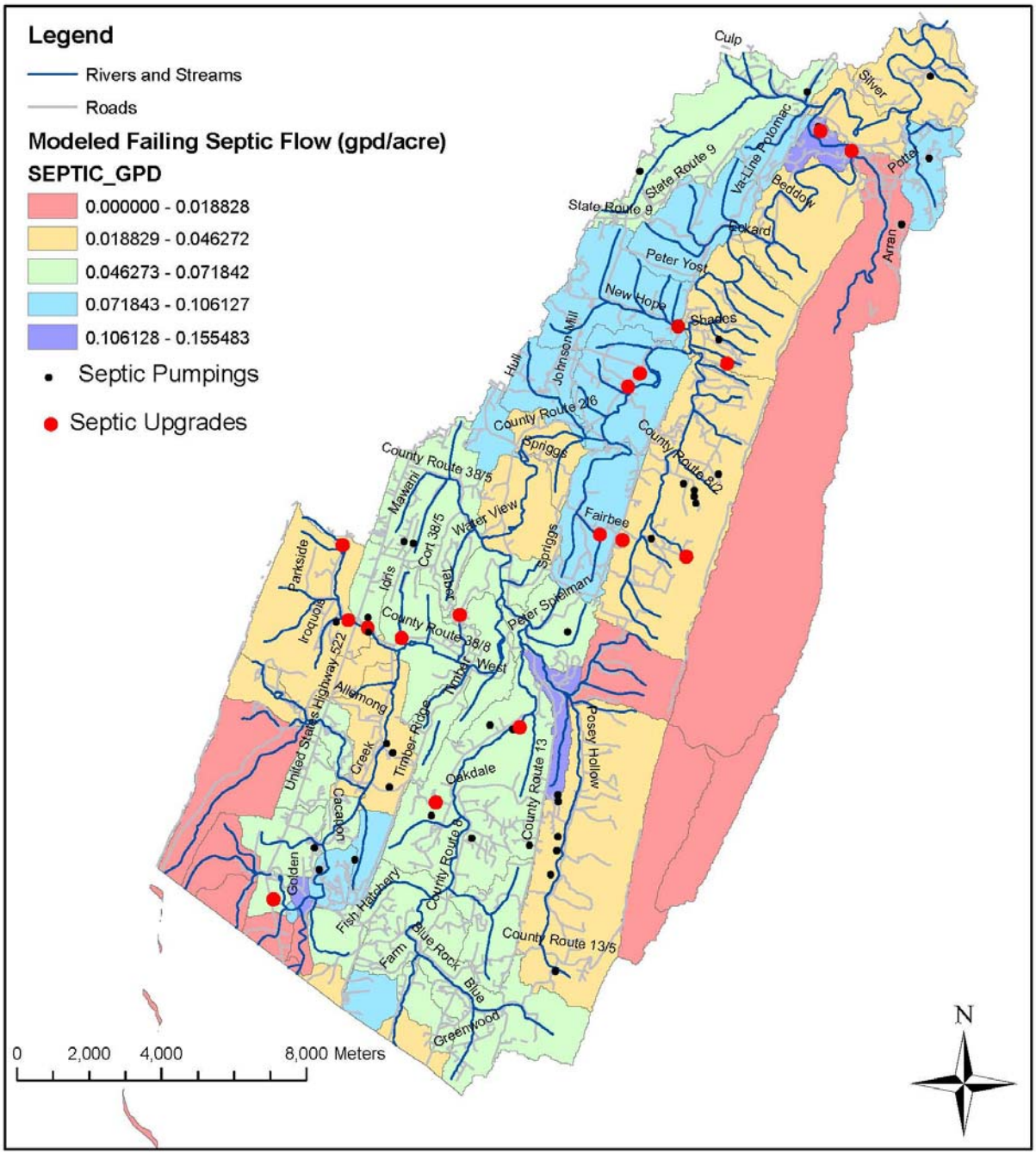


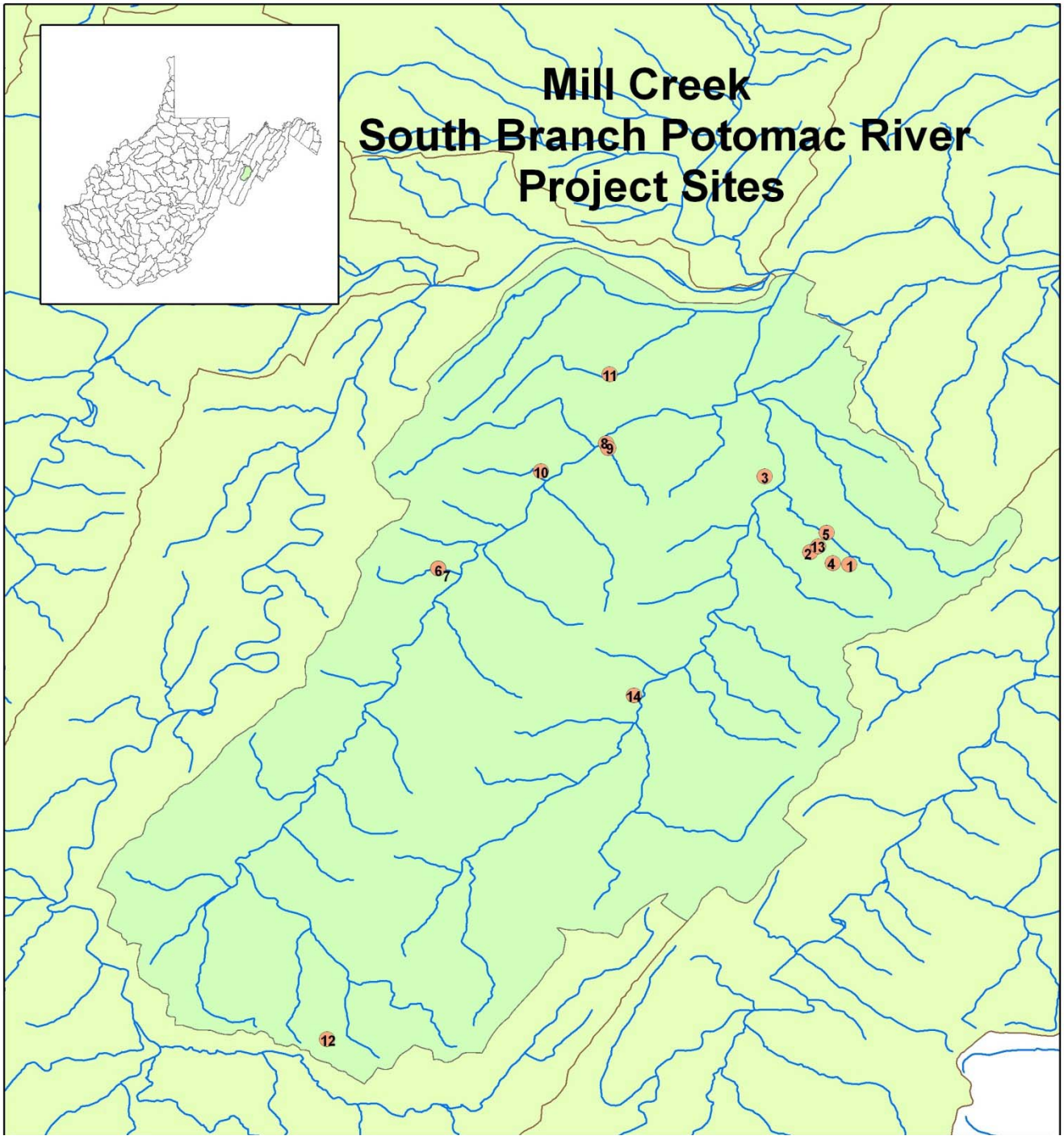


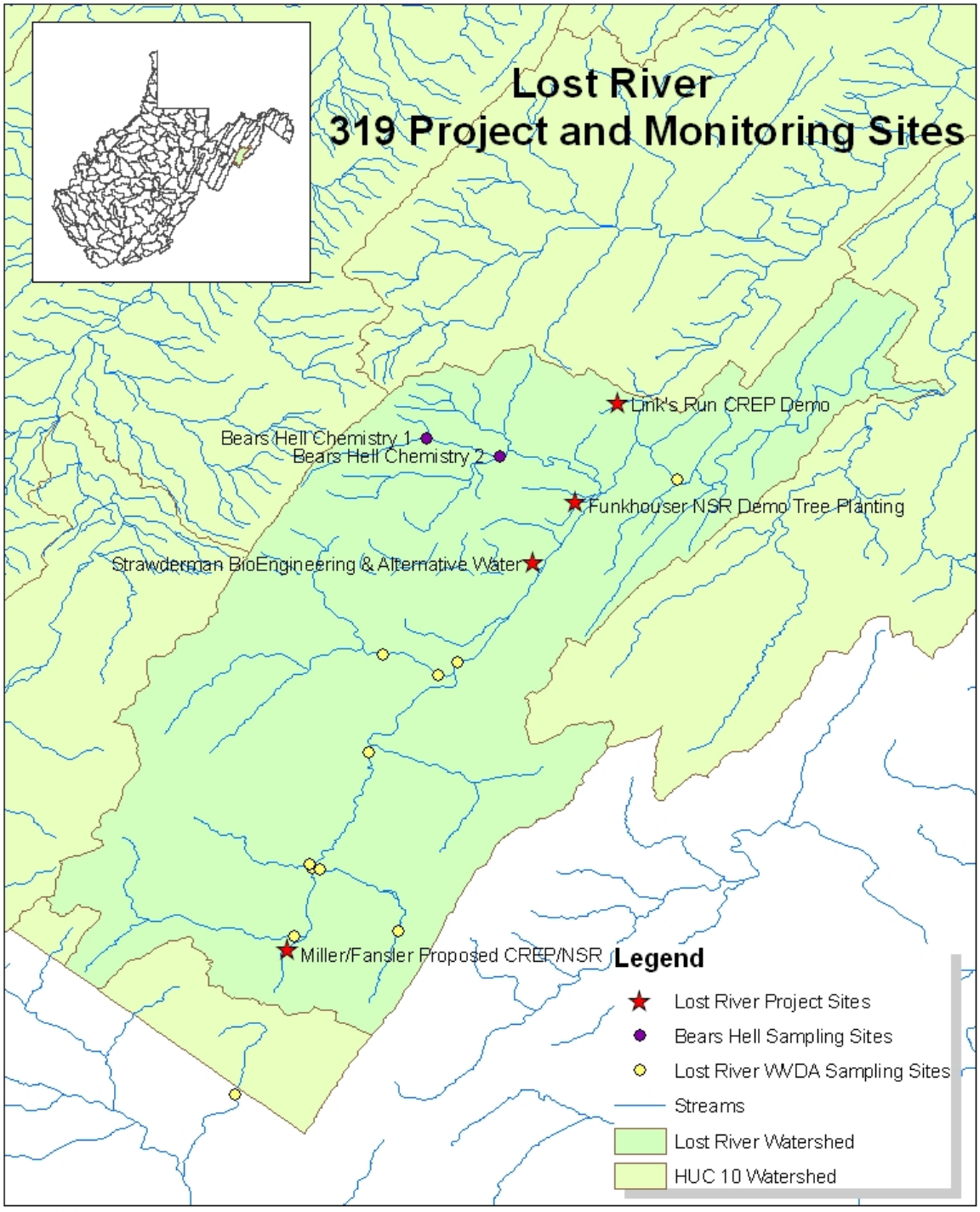
Monongahela and Cheat Projects



Sleepy Creek 319 Project Map
Morgan County, WV
Sleepy Creek Watershed







HUC 10
UTM Zone 17N, NAD 83
Created by A. Duvall, WVDA
May 2009

Commonly Used Acronyms

Acronym	*Meaning*
AMD	Acid mine drainage or alkaline mine drainage
AML	Abandoned Mine Lands Program
ATV	All terrain vehicle
CVI	Canaan Valley Institute
CWA	Clean Water Act
DEP or WVDEP	WV Department of Environmental Protection
DWWM	Division of Water & Waste Management
DOF	Division of Forestry
FY	Fiscal year
KCHD	Kanawha County Health Department
NPSP	Nonpoint Source Program
NRCS	Natural Resources Conservation Service
OLC	Open limestone channel
OO&G	Office of Oil & Gas
PHS	Public Health Sanitation Division
QAPP	Quality Assurance Project Plan
TMDL	Total Daily Maximum Load
VAD	Volunteer Assessment Database
WBP	Watershed based plan
WVCA	WV Conservation Agency
WVSOS	WV Save Our Streams
WVU	West Virginia University